HIGHLIGHTS OF BURUNDI BEAN PROGRAM

PABRA ANNUAL STEERING COMMITTEE MEETING

AT HOTEL CLUB DU LAC TANGANYIKA, BURUNDI

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Outlines

0. Introduction
1. Improvement of Bean Varieties
2. Options for Managing ISFM and IPDM
3. Nutrition work in Burundi
4. Bean Market work
5. Increase access to improved technology and Partners in Technonolgy dissemination
6. Capacity building (Training , backcstopping)

Introduction
Bean Importance in Burundi

- Beans are stapple food in Burundi. The country's average consumption per capita :

  60 kg/year, the highest in the world
- The most produced crop after Banana and sweet patatoes
- Bean crop is grown in all natural regions in Burundi; by more than 90% of households living on small plots of 0.5 ha on average.

Bean Agroecological zones

4 AEZs are distinguished for beans according to altitude:

- IMBO plain (800-1000m) = bush bean
- The East and the North Eastern intermediate range
- (1200 - 1500m) = Bush bean
- The Central Plateau (1500-1900 m) : bush and climbing bean (with climbers 70%)
- The High Altitude (> 1900m) : climbing bean

Bean production constraints

. Abiotic (climatic change and low soil fertility) and biotic (Pests and diseases)

. High price of inputs (fertilizers, pesticides)

. Lack of improved seed

. Low icome for farmers

. Land scarcity

1. Improvement of Bean Varieties

The selection focus on:

1) Evaluation of v**arieties for high quality nutrition : Rich in micronutrient high in Fe, Zn** and protein

2) **varieties with resistance** to 2 or more biotic (pest &diseases) and abiotic (drough and low soil fertility) stresses : MRC

3) **Market class** : both climbing and Bush with high market value (yellow, red, white, snap bean)

1. Varietal development

1.1 Evaluation of bean varieties rich in Micronutrients (Fe, Zn)= biofort

- 5 AYT selected from fast track : being tested on farm field at 3 locations
- New introduction of second generation of micronutrient bean lines : **187** NUA &KAB lines and **82** NUV (**Being evaluated for adaptation and diseases tolerance on 2 locations (low and high)**
- **Released/pre-released : 2 varieties fully released and 3** in pre-released.

1.2. Evaluation of varieties tolerant to two or more major biotic and abiotic stresses with high yieding (on station and farmer level)

- 8 AYT MAC lines : heat tolerant varieties , being tested on farmer/ particpatory approach) on 1 location (Moso):
- 5 AYT BILFA lines (on farmer field) for low soil fertility: Mwasole selected for farmers
- 44 PYT Root rot lines (on station) being tested for adaptation and tolerance to disesaes in 2 locations
- drought tolerant varieties = 4 fully released (KATB1, KATB9, KATX56 and KATX56)
- Climbing and bush bean of various market with high potential : 14 released (newly or old released)

1.3 Varieties for markets: dry bean, and snap (green beans)

- 3 AYT Sugar Bean : on farm level
- New introduction : 111 snap lines received for evaluation some are stables lines (HAB, HBS HAV) while other are still segregating populations (F3 and F4) : being evaluated on station

2. Options for Managing Bean and Soil Productivity

Three options developped and tested by participartory approach with farmers

a) Amendement with organic and inorganic fertilizer :

FYM (10t/ha)

FYM (10t/ha) +DAP(100kg /HA)

The amendement were applied to BILFA lines

The use of farmyard manure 10t/ha) associated with DAP 100 kg/ha gives the higher yield 1,15 kg/ha) than the use of FYM (10t/ha) only (675 kg) in high land at Gisozi

FFS is being conducted with farmers'association in high land in order to create awareness with this option

b) Validation of use of tithonia as green manure

Demonstration : Moso

Field visit (flowering, maturity)

Extensionists, farmers, school children

Field visit at maturiy

Harvesting demonstration with tithonia by school pupil

CONTROL

Tithonia

DAP (100 kg/ha

DAP+TITHONIA

c) Testing staking techniques option on bean climbing bean /participatory approach (ASARECA project)

- - Climbing bean ; high yielding than bush
- - Requires : staking which are not available and remain the major constraints for climbing bean adoption
- 2 techniques compared : using strings & woodwind

Staking materials (strings >< woodwinds)

The Report showed :No significant differences between the 2 techniques of staking (strings and woodwinds for the yield

Strings as staking materials is very interesting: avalaible , requires less wood as staking materials

Options for Managing Bean Pests &diseases

IPDM technologies were :

- **planting tolerant varieties,**
- **timely planting (BSM)**
- **use of kaolin for seed storage,**
- **seed dressing with chemicals (storage),**
- **soil fertility improvement**

3.Nutrition work

In Burundi , nutrition activities initiated in February 2010 :

1) Partner in nutrition activities identified : PRONIANUT (MoH)

2) Documentaion of secondary data on Prevalence of Malnutrition and Food Consumption Patterns in Burundi led to provide an overview of the 5 malnutrition indicators in Burundi which includes :

- **underweight (weight for age),**
- **stunting (height for age),**
- **wasting (weight for height),**
- **Vitamin A deficiency**
- **Iron Deficiency Anaemia**
- **Information on food consumption patterns in Burundi was provided: The dietary is rich in energy (glucid 80%) , poor in protein and lipid , 11% and 9%, respectively , while optimum is 55% glucid, 30% lipid and 15% protein**

4.Markets work in Burundi

The Burundi national bean program conducted a bean value chain analysis study from August-September 2010. The study involved the following value chain components:

- **Bean Producers**
- **seed producers**
- **bean Trader**

A draft bean production and marketing reported has been prepared from the bean value chain survey

Increased access to improved technologies

In order to create awareness on new improved bean technologies the followings activities were conducted:

1. Exhibition of improved varieties in collaboration with : DPAEs (Ngozi and Mwaro) and ISABU pre-extension services and farmers' organization. Small packets were used during exhibition and the most purchased : 1 kg (70%)

2. Plot demonstrations

78 Demonstration plots with improved technologies conducted :

- drougth tolerant : KATB1, KATX56, KATX69 and KATB9
- Improved Climbing bean 3 locations
- Biofort : Ngwakungwaku, Nakaja, VCB81013, VCB81012
- FFS with use of tithonia

3. Promotionnal materials

3 Lefleats developped :

- Katumani varieties (frenh)
- leaflet of Mukungungu variety (Kirundi)
- Leaflet on use of tuthonia as green manure (Kirundi) : used for training
- Posters for released/pre-varieties are available in local language

However the quantities produced by each promotional material remains still low.

Partners in Technology dissemination

FAO/CAU big partner for seed production and dissemination in closely collaboration with public extension services (DPAE) and Farmers'assocciations

CRS : seed dissemination using small packets approach (Kayanza, Muyinga and Kirundo provinces ISABU pre-extension services (Ngozi, Kayanza) : 500 g 189 households in 2010

IFDC (plot demonstration) in different provinces (Ngozi, Makamba, Kirundo , Cibitoke) in collaboration with farmers'organization (UCODE, CAPAD)

CONCERN WORDWIDE Burundi : in seed dissemination of drought varieties in drougth area (Kirundo)

Partners cont

- **Ferga** : company involved in basic seed production (Mwaro)
- Rugofarm : seed production (Cibitoke)
- **CAPAD** : seed production, capacity building, plot demonstration
- **Bio-agri Biha** : seed production and dissemination
- (Muramvya)
- **PADAP Kirundo** (CTB project)/DPAES kIRUNDO : Kirundo , plot demonstration, capacity building
- DPAES (governement extensions Services) in each province
- Atelier de recherche ISABU involved in technology transfert
- (Ngozi/Kayanza, Muyinga) : plot demonstration
- CIALCA : GITEGA, Kirundo, plot demonstration.

Capacity building

- Training on using tithonia at Moso: demonstration, field visit : (180 participants)
- Training farmers in bean management practices at Mwaro (53 participants)
- Trainings of extensionists and research technicians : 30 particiapants

Training of farmers &extensionists

Capacity building technicians and extensionists

Training in seed System in Great Laks (PABRA Support in Partnership/Seed Systems

- **April 2010:**
  - Attended by bean Seed System actors from Burundi (20) DRC (8), Rwanda (10)
  - Shared regional experiences in three Countries
  - Regional trainers from PABRA, Kenya and Uganda
  - Developed national workplan

Results: Increased partnership/Diversified foundation seed sources

- **2009**
  - FAO
  - Provincial Direction of Agriculture and Livestock (DPAEs)
  - ISABU-Technology transfer
- **2010/11** (New private seed entrepreneurs /Civil Society Organizations)
  - FERGA
  - CAPAD (Foundation Seeds)
  - AGRI-BIO Royal (Foundation seed)
  - IFDC
  - CRS
  - Concern
  - Rugo farm (Foundation Seed)

Thank you